REMARKS

Claims 38-84 are pending in the application, claims 1-37 having been cancelled without prejudice, and claims 38-84 having been added by the above amendment. Support for new claims 38-84 can be found, e.g., in original claims 13 and 14 and in the specification at page 2, line 31, to page 3, line 6; page 11, line 13, to page 12, line 10; page 17, line 21, to page 18, line 15; page 21, lines 2-18; and page 27, line 23, to page 28, line 3. These amendments add no new matter.

The present application is a divisional of U.S. Patent Application No. 09/616,289, filed July 14, 2000. The claims of this divisional application are directed to LBP-3 polypeptides. The claims of the parent application (Serial No. 09/616,289) are directed to LBP-2 polypeptides.

CONCLUSIONS

Attached is a marked-up version of the changes being made by the current amendment. Applicants ask that all claims be examined.

Enclosed is a check for the basic filing fee and claims fees. Please apply any other charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 10797-004003.

Respectfully submitted,

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Version with Markings to Show Changes Made

In the Specification:

The paragraph beginning at page 1, line 5, has been amended as follows:

This application is a divisional of U.S. Patent Application No. 09/616,289, filed July 14, 2000, which is a continuation-in-part of U.S. Patent Application No. [USSN] 09/517,849, filed March 2, 2000, which is [was] a continuation-in part of U.S. Patent Application No. [USSN] 08/979,608, filed November 26, 1997, which claimed priority from U.S. Provisional Application No. [USSN] 60/031,930, filed November 27, 1996, and U.S. Provisional Application No. [USSN] 60/048,547, filed June 3, 1997. These applications are incorporated herein by reference in their entirety.

The paragraph beginning at page 6, line 7, has been amended as follows:

Fig. 3 depicts the amino acid sequence of amino acids 319 to [350] 550 of rabbit LBP-2 (SEQ ID NO: 3).

The paragraph beginning at page 6, line 9, has been amended as follows:

Fig. 4 depicts the amino acid sequence of amino acids 299 to [350] 550 of rabbit LBP-2 (SEQ ID No: 4).

The paragraph beginning at page 6, line 28, has been amended as follows:

Fig. 10 depicts the cDNA sequence encoding rabbit LBP-1 (SEQ ID NO: 10) and the corresponding amino acid sequence (SEQ ID NO:1). Differences in amino acids between rabbit and human LBP-1 are depicted in bold type.

The paragraph beginning at page 6, line 31, has been amended as follows:

Fig. 11 depicts a cDNA sequence encoding a portion of rabbit LBP-2 (SEQ ID NO: 11) and the corresponding amino acid sequence (SEQ ID NO:2). Differences in amino acids between rabbit and human LBP-2 are depicted in bold type. Where the sequences depicted in Fig. 2A and

Fig. 11 differ, Fig. 2A represents the rabbit LBP-2 sequence.

The paragraph beginning at page 7, line 4, has been amended as follows:

Fig. 12 depicts a cDNA sequence of nucleotides 256 to 1617 (SEQ ID NO: 12) of SEQ ID NO: 11 of rabbit LBP-2 and the corresponding amino acid sequence (SEQ ID NO:3).

The paragraph beginning at page 7, line 6, has been amended as follows:

Fig. 13 depicts a cDNA sequence of nucleotides 196 to 1617 (SEQ ID NO: 13) of SEQ ID NO: 11 of rabbit LBP-2 and the corresponding amino acid sequence (SEQ ID NO:4).

The paragraph beginning at page 7, line 8, has been amended as follows:

Fig. 14 depicts the cDNA sequence encoding rabbit LBP-3 (SEQ ID NO: 14) and the corresponding amino acid sequence (SEQ ID NO:5). Differences in amino acids between rabbit and human LBP-3 are depicted in bold type.

The paragraph beginning at page 7, line 11, has been amended as follows:

Fig. 15 depicts the cDNA sequence encoding human LBP-1 (SEQ ID NO: 15) and the corresponding amino acid sequence (SEQ ID NO:6). Differences in amino acids between rabbit and human LBP-1 are depicted in bold type.

The paragraph beginning at page 7, line 14, has been amended as follows:

Fig. 16 depicts a cDNA sequence encoding a portion of human LBP-2 (SEQ ID NO: 16) and the corresponding amino acid sequence (SEQ ID NO:7). Differences in amino acids between rabbit and human LBP-2 are depicted in bold type.

The paragraph beginning at page 7, line 17, has been amended as follows:

Fig. 17 depicts a cDNA sequence encoding a portion of human LBP-3 (SEQ ID NO: 17) and the corresponding amino acid sequence (SEQ ID NO:8). Differences in amino acids between rabbit and human LBP-3 are depicted in bold type. Where the sequences depicted in Fig. 8A and Fig. 17 differ, Fig. 8A represents the human LBP-3 sequence.

The paragraph beginning at page 7, line 21, has been amended as follows:

Fig. 18 depicts the cDNA sequence encoding BHF-1 (SEQ ID NO: 18) and corresponding amino acid sequence (SEQ IDNO:9).

The paragraph beginning at page 7, line 22, has been amended as follows:

Fig. 19 corresponds to the amino acid sequence of rabbit LBP-1 (top sequence; SEQ ID NO:1) in alignment with the amino acid sequence of human LBP-1 (bottom sequence; SEQ ID NO:6).

The paragraph beginning at page 7, line 24, has been amended as follows:

Fig. 20 corresponds to the amino acid sequence of a portion of the amino acid sequence of rabbit LBP-2 (top sequence; amino acid residues 331-550 of SEQ ID NO:47) in alignment with a portion of the amino acid sequence of human LBP-2 (bottom sequence; SEQ ID NO:7).

The paragraph beginning at page 7, line 27, has been amended as follows:

Fig. 21 corresponds to the amino acid sequence of rabbit LBP-3 (top sequence; SEQ ID NO:5) in alignment with the amino acid sequence of a portion of human LBP-3 (bottom sequence; SEQ ID NO:44).

The paragraph beginning at page 7, line 30, has been amended as follows:

Fig. 22 depicts the genomic sequence of human LBP-1 (SEQ ID NO:49) and corresponding amino acid sequence (SEQ ID NO:6).

The paragraph beginning at page 7, line 31, has been amended as follows:

Fig. 23 depicts the genomic sequence of human LBP-2 (SEQ ID NO:50) and corresponding amino acid sequence (SEQ ID NO:43).

The paragraph beginning at page 8, line 1, has been amended as follows:

Fig. 24 depicts the genomic sequence of human LBP-3 (SEQ ID NO:51) and

corresponding amino acid sequence (SEQ ID NO:44).

The paragraph beginning at page 8, line 11, has been amended as follows:

This invention provides for an isolated polynucleotide comprising a polynucleotide encoding the polypeptide having the amino acid sequence of rabbit LBP-1 as set forth in Fig. 1 (SEQ ID NO: 1); rabbit LBP-2 as set forth in Fig. 2A (SEQ ID NO: 47); a portion of rabbit LBP-2 as set forth in Fig. 2B (SEQ ID NO: 2); 319 to [350] 550 of rabbit LBP-2 as set forth in Fig. 3 (SEQ ID NO: 3); 299 to [350] 550 of rabbit LBP-2 as set forth in Fig. 4 (SEQ ID NO: 4); rabbit LBP-3 as set forth in Fig. 5 (SEQ ID NO: 5); human LBP-1 as set forth in Fig. 6 (SEQ ID NO: 6); human LBP-2 as set forth in Fig. 7A (SEQ ID NO: 43); 322 to 538 of human LBP-2 as set forth in Fig. 7B (SEQ ID NO: 7); human LBP-3 as set forth in Fig. 8A (SEQ ID NO: 44); 17-546 of human LBP-3 as set forth in Fig. 8B (SEQ ID NO: 8); 14 to 33 of human (SEQ ID NO:6) or rabbit (SEQ ID NO:1) LBP-1, called BHF-1, as set forth in Fig. 9 (SEQ ID NO: 9); a polynucleotide capable of hybridizing to and which is at least about 80% identical, more preferably at least about 90% identical, more preferably yet at least about 95% identical, and most preferably at least about 98% identical to any of the above polynucleotides, and wherein the encoded polypeptide is capable of binding to LDL; or a biologically active fragment of any of the above polynucleotides wherein the encoded polypeptide is capable of binding to LDL.

The paragraph beginning at page 11, line 26, has been amended as follows:

This invention also includes an isolated polypeptide comprising a polypeptide having amino acid residues 329-343 (SEQ ID NO: 19), 329-354 (SEQ ID NO: 20), 344-354 (SEQ ID NO: 21) or 529-538 (SEQ ID NO: 22) as set forth in Fig. 7A (SEQ ID NO: 47); amino acid residues 14-43 (SEQ ID NO: 23) or 38-43 (SEQ ID NO: 24) as set forth in Fig. 1 (SEQ ID NO: 1) and Fig. 6 (SEQ ID NO: 6); amino acid residues 338-353 (SEQ ID NO: 25), 338-365 (SEQ ID NO: 26), 354-365 (SEQ ID NO: 27) or 444-453 (SEQ ID NO: 28) as set forth in Fig. 2A (SEQ ID NO: 47); amino acid residues 96-110 (SEQ ID NO: 29) as set forth in Fig. 5 (SEQ ID NO: 5); and amino acid residues 69-75 (SEQ ID NO: 41) as set forth in Fig. 8A (SEQ ID NO: [8] 44); or a polypeptide which is at least about 80% identical, more preferably at least about 90% identical, more preferably yet at least about 95% identical, and most preferably at least about 98% identical

to the above polypeptides, and wherein said polypeptide is capable of binding to LDL; or a biologically active fragment of any of the above polypeptides wherein the fragment is capable of binding to LDL.

The paragraph beginning at page 34, line 3, has been amended as follows:

Thus, a diagnostic embodiment of the invention is the adaptation of, e.g., a peptide complementary to one of the LBPs, by radiolabeling it and using it as an injectable imaging agent for detection of occult atherosclerosis. The peptide is selected from those known to bind to LBPs, e.g., RRRRRRR (SEQ ID NO:52) or KKLKLXX (SEQ ID NO:53), or any other polycationic peptide which binds to the highly electronegative domains of the LBPs. For extracorporeal detection with a gamma scintillation (Anger) camera, technetium-binding ligands, e.g., CGC, GGCGC, or GGCGCF, can be incorporated into the peptides at the N-terminus or C-terminus for ^{99m}Tc labeling. For external imaging by magnetic resonance imaging (MRI), e.g., the gadolinium-binding chelator, diethylene triamine penta-acetic acid (DTPA), is covalently bound to the N- or C-terminus of the peptides. In yet other embodiments, the LBP-binding peptides are covalently bound, e.g., to magnetic ion oxide particles by standard methods known to those skilled in the art, e.g., conjugating the peptides with activated polystyrene resin beads containing magnetic ion oxide.

In the Claims:

Claims 1-37 have been cancelled without prejudice.